

App. No. 09/927,096
Amendment Dated: June 14, 2006
Reply to Office Action of March 17, 2006

Listing of Claims:

1 (Currently amended): A computer-readable medium having computer-executable components, comprising:

a search engine manager configured to receive a search query from a client and to translate the search query to a standard query, wherein the standard query is universally formatted for search engine wrappers, and to communicate the standard query from the search engine manager to a search engine wrapper; and

the search engine wrapper being configured to translate the standard query to a native format query of associated with a registered search engine associated with the search engine wrapper and to communicate the native format query to the registered search engine, the search engine wrapper being further configured to return results from the registered search engine to the search engine manager.

2 (Currently amended): The computer-readable medium of claim 1, wherein the search engine manager further comprises:

a client interface configured to allow the search engine manager to communicate with the client;

a query generation module configured to receive the search query from the client interface and to generate the standard ~~search~~ query; and

a wrapper interface configured to provide the standard query to the search engine wrapper.

3 (original): The computer-readable medium of claim 1, wherein the search engine wrapper further comprises:

a manager interface configured to provide standardized communication between the search engine wrapper and the search engine manager;

a query translation module configured to translate the standard query received from the search engine manager into the native format query associate with the registered search engine; and

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a search engine interface configured to allow the search engine wrapper to communicate with the registered search engine in the native format of the registered search engine.

4 (original): The computer-readable medium of claim 3, wherein the manager interface includes a COM (Component Object Model) interface.

5 (original): The computer-readable medium of claim 3, wherein the search engine interface includes a COM (Component Object Model) interface.

6 (original): The computer-readable medium of claim 3, wherein the manager interface allows for standardized communication between the search engine manager and the search engine wrapper such that any number of search engine wrappers may be interfaced with the search engine manager without requiring further translation of the search query for each search engine wrapper.

7 (Currently amended): A computer-implemented method for communicating between a client and a plurality of search engines in a distributed processing system, comprising the steps of:

at a search engine manager:

receiving a search query having a plurality of search parameters, the search query being generated by a search client;

building a standard query from the search query, wherein the standard query is universally configured to be understandable by a plurality of engine wrappers; and

issuing the standard query to each of a the plurality of search engine wrappers;

at each of the plurality of search engine wrappers:

receiving the standard query;

translating the standard query to a native format query for a search engine associated with the search engine wrapper; and

issuing the native format query to the search engine associate with the search engine wrapper.

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8 (original): The method of claim 7, wherein each search engine wrapper is configured to issue a progress update and a wrapper ID to the search engine manager.

9 (original): The method of claim 7, wherein the search engine manager is configured to disable issuing the standard query to a selected search engine wrapper in accordance with the search query.

10 (original): The method of claim 7, wherein issuing the standard query to each of the plurality of search engine wrappers is facilitated by a standardized interface.

11 (original): The method of claim 10, wherein the standardized interface includes a COM (component object model) interface.

12 (original): The method of claim 11, wherein each of the plurality of search engine wrappers are registered with the search engine manager to provide searching capabilities.

13 (Currently amended): A computer-readable medium having computer-executable instructions for performing steps, comprising:

registering a search engine to provide searching capabilities;

receiving, at a search engine manager, a client query from a client;

building a standard query from the client query received from the client, wherein the standard query is universally formatted for wrappers;

passing the standard query from the search engine manager to a wrapper associated with the registered search engine;

translating, at the wrapper, the standard query to a translated query in a native format of the registered search engine;

transmitting the translated query to the registered search engine; and

receiving results of the translated query from the registered search engine.

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14 (original): The computer-readable medium of claim 13, wherein registering the search engine further comprises registering an associated wrapper with a common registration service.

15 (original): The computer-readable medium of claim 14, wherein registering the associated wrapper further comprises storing a wrapper ID which uniquely identifies the associated wrapper, and storing other information, in a database associated with the common registration service.

16 (original): The computer-readable medium of claim 13, wherein passing the standard query from the search engine manager is performed through a standardized interface allowing for a multiplicity of wrappers associated with other search engines to receive the standard query.

17 (original): The computer-readable medium of claim 15, wherein the standardized interface includes a COM (Component Object Model) interface.

18 (original): The computer-readable medium of claim 13, wherein building the standard query further comprises combining, by a query generation module, the client query with other parameters received from the client.

19 (original): The computer-readable medium of claim 13, wherein translating the standard query further comprises transforming the standard query to the native format of the search engine through the use of a translation module.

20 (original): The computer-readable medium of claim 13, wherein receiving the results further comprises enumerating the results, returning the wrapper ID to the search engine manager, and returning progress updates to the manager until the results are returned.

21 (Currently amended): A computer-readable medium having computer-executable instructions for performing steps, comprising:

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discovering at least one search engine registered with a search system;
receiving a query initiated by a client accessing the search system;
building a standard query from the query initiated by the client, wherein the standard query is universally configured to be understandable by a plurality of engine wrappers;
transmitting the standard query to at least one search engine wrapper configured to translate the standard query to a native format query associated with the at least one search engine registered with the search system;
requesting a response from the at least one search engine wrapper the response including a progress update for the standard query as it is executed and the results of the standard query;
and
receiving the response from the at least one search engine wrapper.

22 (original): The computer-readable medium of claim 21, wherein discovering at least one search engine registered with the search system further comprises accessing a search engine store to retrieve identification information for the at least one search engine registered with the search system.

23 (original): The computer-readable medium of claim 21, wherein receiving the query initiated by a client further comprises receiving the query through a COM interface.

24 (original): The computer-readable medium of claim 21, wherein building the standard query further comprises using a query generation module to generate a standard query that is in the format of the at least one search engine wrapper.

25 (original): The computer-readable medium of claim 21, wherein transmitting the standard query further comprises not transmitting the standard query to a search engine wrapper that is excluded by the client.

26 (original): The computer-readable medium of claim 21, wherein the response received indicates that the standard query is complete.

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27 (original): The computer-readable medium of claim 21, wherein the response received indicates that the standard query failed because a time limit for receiving a response is exceeded.

28 (original): The computer-readable medium of claim 21, wherein the response indicates that the standard query is because the at least one search engine associated with the at least one search engine wrapper is not finished with its associated native format query.

29 (Currently amended): A computer-readable medium having computer-executable instructions for performing steps, comprising:

receiving a standard query from a search engine manager, wherein the standard query is universally configured to be understandable by a plurality of engine wrappers;

translating the standard query into a native format query associated with at least one search engine;

transmitting the native format query associated with the at least one search engine to the at least one search engine;

transmitting a progress update to the search engine manager for the standard query as it is executed;

receiving results from the at least one search engine; and

transmitting the results received from the at least one search engine to the search engine manager.

30 (original): The computer-readable medium of claim 29, wherein receiving a standard query further comprises receiving the standard query through a COM interface.

31 (original): The computer-readable medium of claim 29, wherein translating the standard query into a native format query further comprises using a translation module.

32 (original): The computer-readable medium of claim 29, wherein the native format query is different for each of the search engines when multiple search engines are used.

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33 (original): The computer-readable medium of claim 29, wherein transmitting the native format query further comprises dynamically altering parameters of the native format query according to the search engine.

34 (original): The computer-readable medium of claim 29, wherein transmitting a progress update further comprises transmitting an identification parameter for identifying the at least one search engine.

35 (original): The computer-readable medium of claim 29, wherein the at least one search engine is stopped from continuing to execute the native format query when a time limit for receiving a response is exceeded.

36 (original): The computer-readable medium of claim 29, wherein transmitting the results received from the at least one search engine further comprises transmitting the results in response to a request for the results from the search engine manager.